**Before the Federal Communications Commission**

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| In the Matter of | ) | MM Docket No. 99-25 |
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| Creation of a Low | ) | |
| Power Radio Service | ) | |
| | ) | |
| Comments of Fred R. Goldstein | ) | |

These are the personal comments of Fred R. Goldstein. While I am professionally employed as a consultant to the telecommunications sector, I have been involved in various aspects of the broadcasting, computer and publishing fields. I was in the early 1970s the chief engineer of a college radio station (WSPN, Saratoga Springs, NY) and arranged for it to acquire a 10-watt (Class D) FM license. I also hold an Amateur Radio license, Extra class (K1IO) and have been involved in many aspects of telecommunications regulation.

I strongly support the goals of the Commission in issuing this NPRM. But I would like to focus on the low end of the proposal, which offers the most unique opportunities. The proposed LP1000 class of license is nearly indistinguishable in most respects from current Class A licenses, and has a greater range than some AM broadcast stations. So-called Amicroradio= is focused elsewhere, at the localized, low-power range, where a larger number of broadcasters can be accommodated by the broadcast spectrum, and where interference potential is relatively small.

An FM radio station with a power of 10 watts or less serves a set of useful functions that is quite distinct from its higher-powered counterparts. College FM stations, historically the major examples, provide a service to both the campus community and to nearby residents, including off-campus students and the public at large. High-powered stations simply do not fit in as many locations; the loss of the Class D license some years ago restricted entry for schools, both at the secondary and college level, that might otherwise have built them.

But a microradio station not affiliated with an educational institution serves a different and valuable function. Its journalistic counterpart is not the daily newspaper; rather it is more like a weekly paper, offering service to either a small community or to a narrower sector of the community than can be addressed by large, high-budget, typically chain-owned stations. Weekly newspapers do not substantially take away audience from dailies; rather, the two are complementary. Likewise, microradio can complement high-powered stations by offering broadcast services not economical in today=s environment.

I therefore support creation of a new class of FM station with transmitter power output in the 1-10 watt range, licensed on a secondary (unprotected but non-interference-causing) basis. Commercial broadcasters have a right to be free of new interference; however, type-approved transmitters of this power level do not have the interference potential of

higher-powered ones.

I therefore suggest certain technical parameters. Second-adjacent-channel interference potential is very limited; if the zone of such interference is limited to the property of the licensee (e.g., a college campus) or a similar ≅theoretically non-zero≅ zone that does not impact significant populations, it should not prevent licensing. I note the case of a station that located its 10-watt transmitter on a 1000-foot television tower I order to create no second-adjacent-channel interference at the 30-foot measurement height!. Such workarounds are rarely available and should not be necessary. At the time I helped WSPN get its Class D license (1973), one of the most popular radio stations on the college campus was at 91.5 MHz; since its protected zone ended two miles away, we were able to put WSPN on 91.1. The transmitter was on the roof of a campus dormitory. There was negligible interference to the station 91.5; that station remained popular on campus, even though we were technically outside of its protected contour. Third-adjacent-channel potential is in any case de minimis, because modern receivers have better selectivity than the ≅i.f. cans≅ used when the current rules were promulgated. There is no need for protection of third adjacent channels from these stations.

First-adjacent and second-adjacent channel interference may in some cases be controllable by restricting the bandwidth of the microradio FM station. Several methods could be used, as noted in the NPRM, to specify a narrowing of the spectrum. If an adjacent- or second-adjacent-channel station demonstrates a serious potential for interference, a simple approach could be for the microradio station to have its peak deviation index lowered to four from the standard five. This 60 kHz deviation would produce a barely-audible (roughly 1 dB) reduction in received volume, but substantially increase the size of guard bands. Such stations should also have their ability to offer SCA services restricted. (SCA is however rarely of interest to such stations.)

Current ≅HAAT≅ measurement techniques may not be applicable to stations with power levels below 100 watts. Their intended coverage range is generally limited to about three miles, but HAAT numbers are generally computed on a much larger radius! If HAAT is to be used at all, it should be based on a more appropriate methodology. The use of ERP as a power limit may also be inappropriate. Class D stations were limited to 10 watts Transmitter Power Output. Higher ERPs generally resulted in lower interference potential, because the more directive antennas put less power into nearby ≅below the tower≅ locations, and because power could be directed away from areas where the station could cause potential interference. However, actual antenna patterns and power limits for a microradio station may need to be limited on some occasions in order to reduce interference; this need not be the default.

With regard to licensing and allocation conflicts, I propose that a more flexible regime be used for microradio stations than for higher-powered ones. The overriding principle should be non-interference. However, these stations often may not have the wherewithal to broadcast full-time schedules. Therefore frequency sharing should be encouraged. Flexibility should be encouraged, and mutual exclusivity should always not be assumed. Ownership (duopoly) limits should be more stringent than for protected stations, in order

to maximize diversity, and the total number of stations owned by a licensee should be limited as well, lest large chains of commercial owners lock out the local ownership that this proposal is intended to encourage.

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